

Date: Friday, 12/7/2007 10:21:17 AM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : FWD TUBE ASSEMBLY
 Job Number : 36190
 Estimate Number : 10467
 P.O. Number :
 This Issue : 12/7/2007 S.O. No. :
 Prsht Rev. : NC Part Number : D3391021
 First Issue : / / Type : MACHINED PARTS Drawing Number : D3391 REV G
 Previous Run : 35839 Project Number : N/A
 Material :
 Due Date : 1/10/2008 Qty: 1 Um: Each
 Written By :
 Checked & Approved By :
 Comment : Est. A 05.09.13 New issue KJ/JLM
 Est. B 06.02.10 Dwg rev.D ecn 773 EC
 Est. C 06.05.02 Added inspections EC
 est D 07.03.13 rev F dwg EC
 est E 07.11.07 revG dwg ecn1053P EC verified by: DD
 Est Rev:f ECN 1056 07-11-12 DD verified by: EC

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D6013047 SKIDTUBE MAT'L



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
 SKIDTUBE MAT'L

Pick:

Qty	Part Number	Description	Batch
1	D6013-047	Extrusion	B26547

Q-m 08.01.09 (D)

2.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1
 Cut extrusion to 46.52 +0.010 -0.020

Q-m 08.01.09 (D)

3.0 BENDING BENDING MACHINE



Comment: No bender
 Bend as per Dwg D3391 Using Bend Prog 3391021

EL/ID 8-1-16

4.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/03/10 (H)

5.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1
 1-Machine as per Folio FA590 Rev. AA & Dwg D3391 Rev. G
 Identify as D3391-1

Q-m 08/02/16 (D)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 12/7/2007 10:21:17 AM
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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36190

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

2-Deburr

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

ml 08/07/16

①

7.0

MILLING CONV.

CONVENTIONAL MILLING MACHINE



Comment: CONVENTIONAL MILLING MACHINE

Drill X1 Aft cap as per Dwg D3391 .1875" dia

ml 08/07/16

①

8.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

ml 08/07/16

①

9.0

QC8

SECOND CHECK



Comment: SECOND CHECK

S 08/07/16

④

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5-Deburr & Scribe Batch number Inside aft end.

DP

8-7-17

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 08/07/16

W/O:		WORK ORDER CHANGES					
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Job Number: 36190

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

SL 8-7-24

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

Q.M. 08-07-24 D

14.0

D36704200

SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

SPACER

batch: 35938

SL 8-7-24

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch: 107621

exp. date: 9-8-1

cure time 12hrs. as per QSI015

2- grind crossbolt flush

3-back drill crossbolt if necessary

SL 8-7-24

SL 8-7-29

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8 08/02/30 (40)

17.0

POWDER COATING

POWDER COATING



M108523



(1X)

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M.A.

08/07/30

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08-08-18

(10)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36190

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

ALS41032130

Insert



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

batch: M105819

or equivalent

per QSI 017

JS

20.0

ALS41032225

Insert



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

INSERT

batch: M100489

or equivalent

per QSI 017

JS

21.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg

JS

02-08-18 (X)

22.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

N/A

JS

08 08 18

23.0

D3401041

Tow Cap Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Tow Cap Assembly

Pick:

Qty

Part Number

Description

Batch

1

D3401-041

Tow Cap

B36216

JS

24.0

D356413

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE

13 39791

JS

25.0

D356613

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

B 39574

JS

02-08-18 (X)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36190

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

26.0

D36721

PHENOLIC WASHER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

PHENOLIC WASHER

1339275

214

27.0

AN3C4A

BOLT



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

4

AN3C4A

Bolt

M108599

21

28.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

washer

M108672

21

29.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Install tow Cap as per Dwg D3391

Identify as D3391-021

21

08-08-19 (X)

30.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect thread of each insert using DT8821

08-08-27 (1)

31.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: W/O 40521

D3391-023

08-08-27 (1)

32.0

QC21

FINAL INSPECTION/W/O RELEASE



(1)

Comment: FINAL INSPECTION/W/O RELEASE

08-08-29

Job Completion



W 08-08-29

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

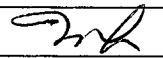

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

DART AEROSPACE LTD		Work Order:	36190
Description: Float Skidtube (412)		Part Number:	D3391-1
Inspection Dwg: D3391 Rev: G		Page 1 of 1	

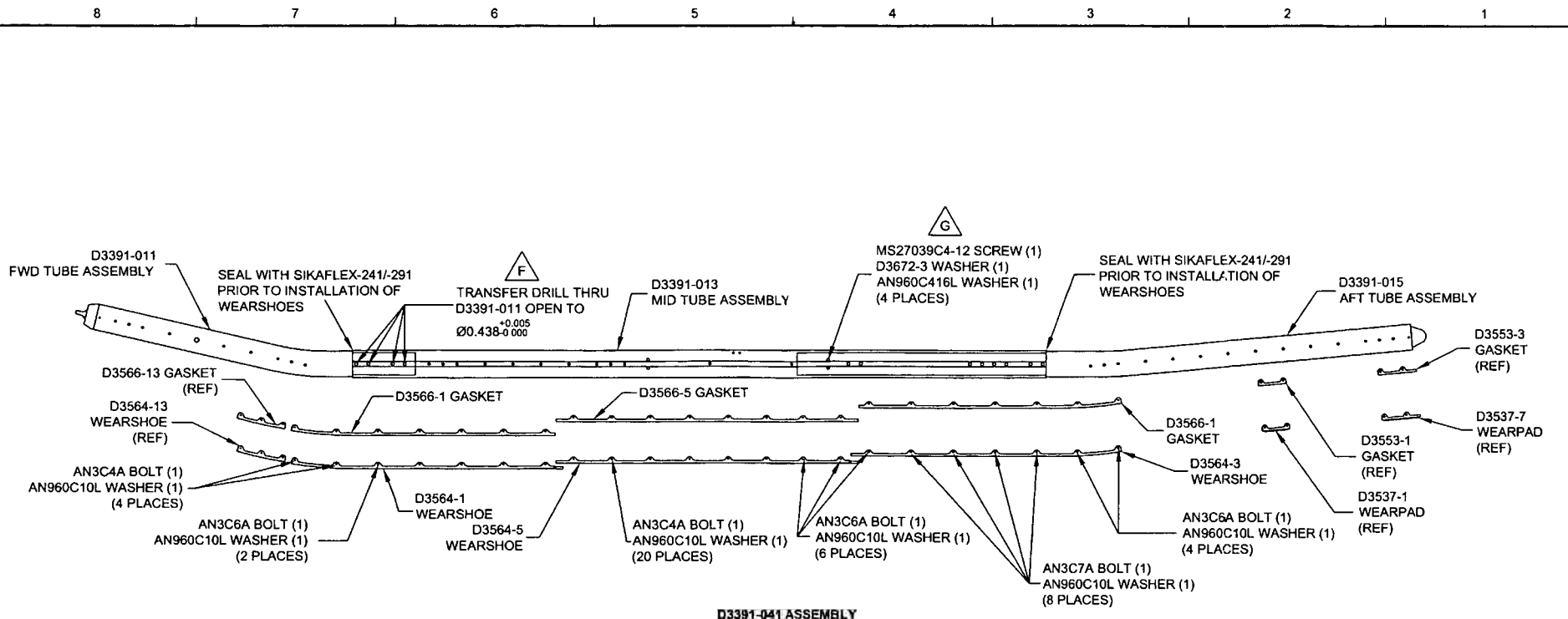
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.687	+0.010/-0.000	0.690	✓			
3.590	+0.025/-0.010	3.615	✓			
3.300	+0.040/-0.000	3.325	✓			
1.429	+0.040/-0.060	1.390	✓			
4.250	+/-0.010	4.250	✓			
4.250	+/-0.010	4.250	✓			

Measured by:		Audited by:		Prototype Approval:	N/A
Date:	08/02/16	Date:	08/02/16	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.27	New Issue P/O D3391-011/-021	KJ/JLM	
B	06.06.19	Tolerances revised per D3391 Rev. E	KJ/JLM	
C	07.03.21	Dimensions removed per Dwg rev. F	KJ/JLM	
D	07.11.23	Dwg Rev. updated	KJ/EC/DD	 



D3391-041 ASSEMBLY

RELEASED
07-11-06

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

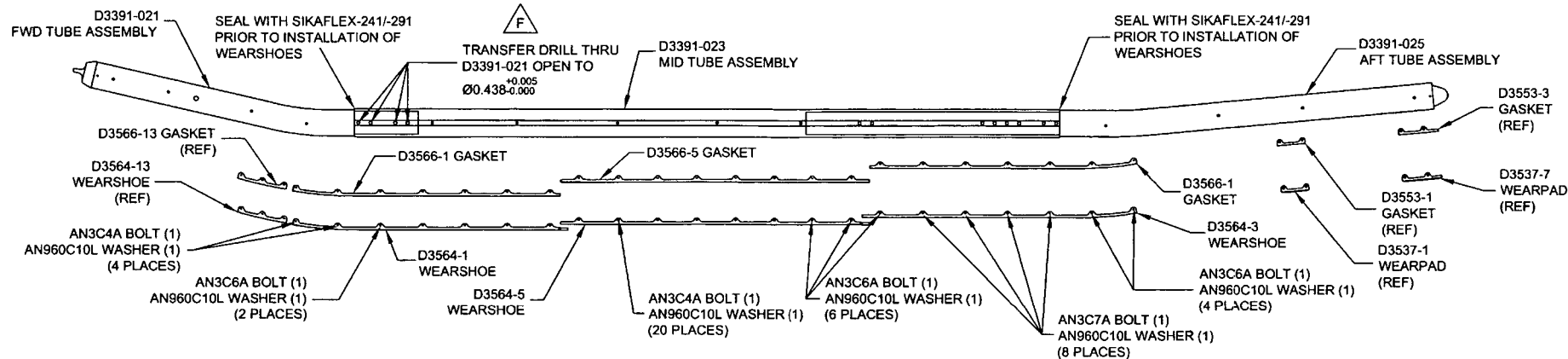
GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE

DESIGN	AP	DART AEROSPACE USA, INC	
DRAWN	JP	PORT HADLOCK, WA	
CHECKED	JP	DRAWING NO.	REV. G
MFG. APPR.	JP	D3391	SHEET 1 OF 8
APPROVED	JP	TITLE	SCALE
DE APPR.	JP	412 FLOAT SKIDTUBE	NTS
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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D3391-043 ASSEMBLY

RELEASED
07.11.94

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

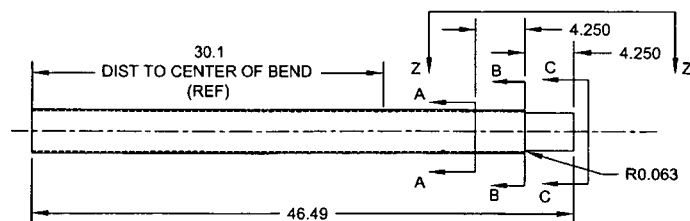
QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

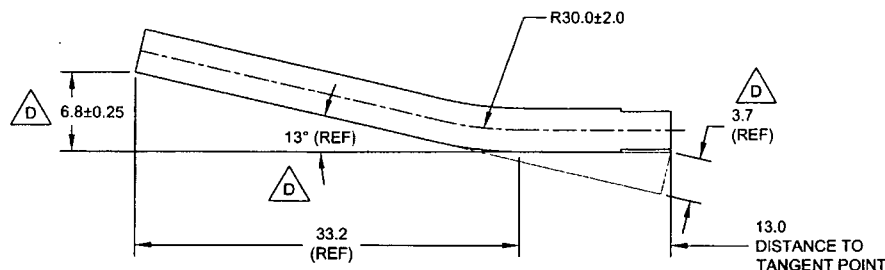
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH
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- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
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FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	JC	PORT HADLOCK, WA	
CHECKED	JP	DRAWING NO.	REV. G
MFG. APPR.	JP	D3391	SHEET 2 OF 8
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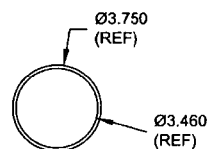
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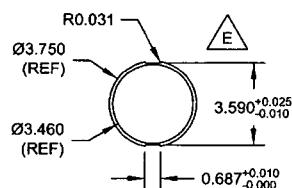
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



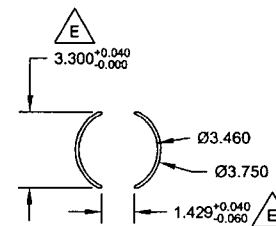
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



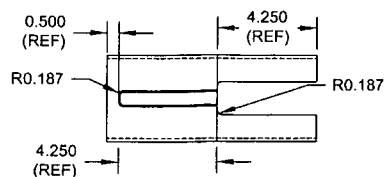
SECTION A-A
(SCALE 1:5)



SECTION B-B
(SCALE 1:5)



SECTION C-C
(SCALE 1:5)

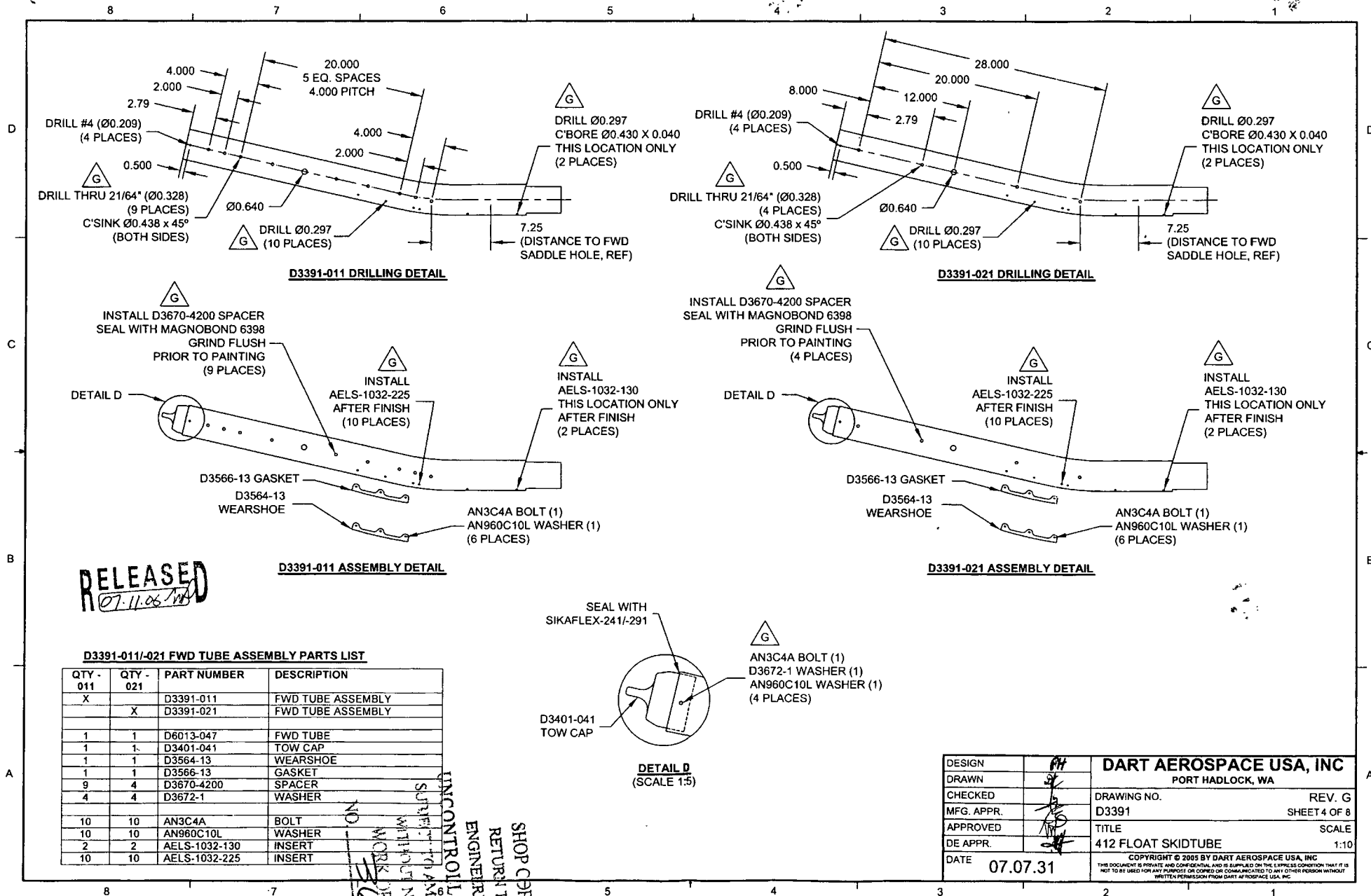


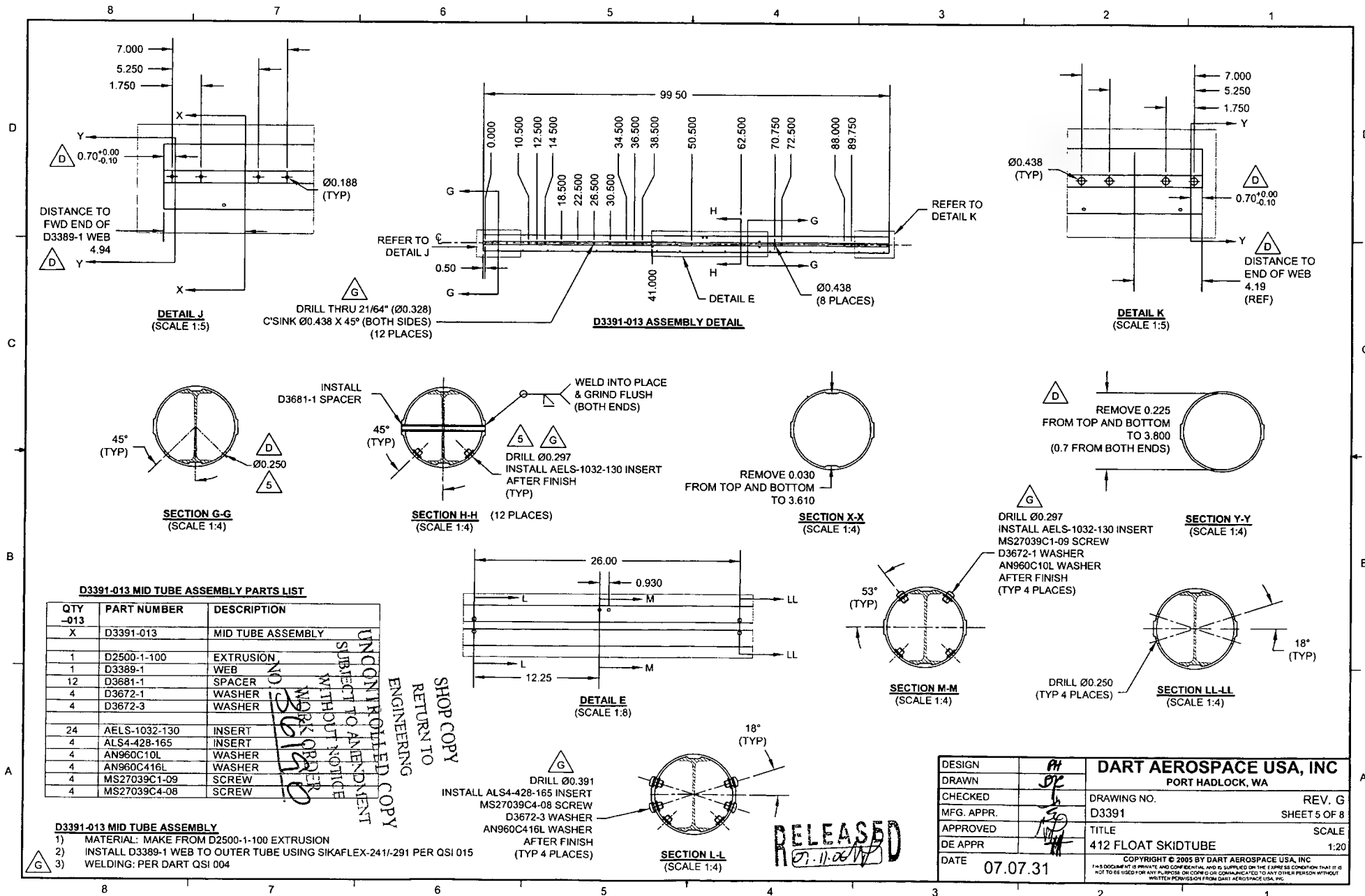
VIEW Z-Z
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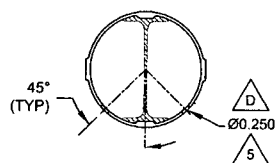
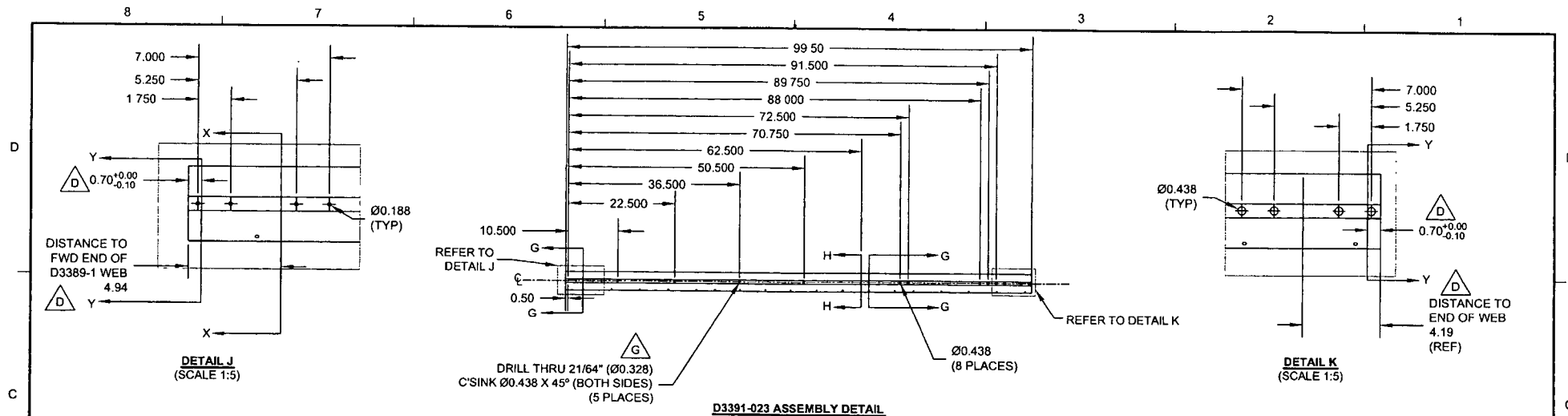
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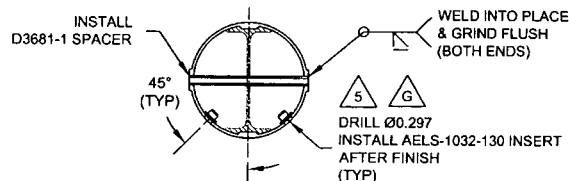
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CHECKED	JH	DRAWING NO.	REV. G
MFG. APPR.	JH	D3391	SHEET 3 OF 8
APPROVED	JH	TITLE	SCALE
DE APPR.	JH	412 FLOAT SKIDTUBE	1:10
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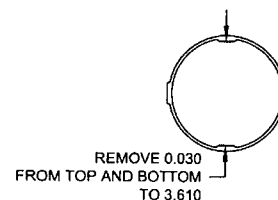




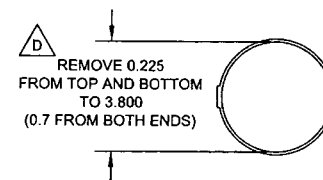
SECTION G-G
(SCALE 1:4)



SECTION H-H
(SCALE 1:4)



SECTION X-X
(SCALE 1:4)



SECTION Y-Y
(SCALE 1:4)

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 010
- 3) WELDING: PER DART QSI 004

RELEASED
07-11-06

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	DE	PORT HADLOCK, WA	
CHECKED	h	DRAWING NO.	REV. G
MFG. APPR.	PH	D3391	SHEET 6 OF 8
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DE APPR.	PH	412 FLOAT SKIDTUBE	1:20
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